Argonne NATIONAL LABORATORY

Feature

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Model Fuel Cell Car Competition: Fueling future scientists and engineers

It may not be rocket science, but its close. Fuel cells have been used to power spacecraft for years and on Saturday, April 16, 2011, Chicago-area middle school students will use fuel cells to power model cars at equipment manufacturer Case New Holland (CNH) in Burr Ridge, Ill., as part of the Chicago Regional Science Bowl, sponsored by the U.S. Department of Energy (DOE) and Argonne National Laboratory.

"Racing is just part of the excitement," said Andrew Skipor who leads Argonne's Division of Educational Programs. "Students not only compete in heats to see who has the fastest car but also participate in an engineering design competition to show off their knowledge and understanding of the technology."

The competition provides students an opportunity to apply science and engineering principles to real-world applications as they explore alternative energy sources. It also incorporates different forms of learning to interest and motivate students while enhancing teamwork, experimentation and problem-solving skills.

Each team designs and builds a working, fuel-cell-powered model car using identical electrical motors. The model cars use a fuel cell to turn hydrogen gas and oxygen from the air into electricity to power the motor. The cars race in heats along a 10-meter course. Prizes will be awarded for the fastest cars, best design and best working knowledge of the principles for using fuel cells to power model vehicles.

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"This event helps students see first-hand how science, creativity and collaboration work together," said Argonne's Lou Harnisch, event coordinator. "It's a fun and exciting way to introduce students to principles like momentum, gearing, torque, friction and power generation together with an understanding of renewable energy and the environment."

The competition requires students to use applied science and engineering skills to meet technical challenges similar to those that scientists and engineers face every day.

The design competition kicks off just after 9:00 a.m., and the race begins at approximately 11:00 a.m. More information about the event is available at http://www.dep.anl.gov/science-bowl/

This year's participants, include:

- Altgeld Elementary School, Chicago, IL
- Crone Middle School, Naperville, IL
- Daniel Wright Junior High School, Lincolnshire, IL
- Elm Middle School, Elmwood Park, IL
- George Washington Middle School, Lyons, IL
- Hadley Junior High School, Glen Ellyn, IL
- Homer Junior High School, Homer Glen, IL
- Jerling Junior High School, Orland Park, IL Maple Middle School, Northbrook, IL
- Oak Prairie Junior High, Homer Glen, IL
- Old Quarry Middle School, Lemont, IL
- Roosevelt Middle School, River Forest, IL
- Teach Homeschool, Oak Park, IL
- Troy Middle School, Plainfield, IL
- Stanley Clark School, South Bend, IN
- Yorkville Middle School, Yorkville, IL

The Model Fuel Cell Car Competition is also sponsored by CNH, the Chicago Section of the Society of Automotive Engineers and the University of Chicago .

CNH is the power behind leading agricultural and construction equipment brands of the Case and New Holland brand families. The company's Burr Ridge headquarters is located at the northwest corner of the Stevenson Expressway (I-55) and County Line Road.

The U.S. Department of Energy's Argonne National Laboratory seeks solutions to pressing national problems in science and technology. The nation's first national laboratory, Argonne conducts leading-edge basic and applied scientific research in virtually every scientific discipline. Argonne researchers work closely with researchers from hundreds of companies, universities, and federal, state and municipal agencies to help them solve their specific problems, advance America's scientific leadership and prepare the nation for a better future. With employees from more than 60 nations, Argonne is managed by UChicago Argonne, LLC for the U.S. Department of Energy's Office of Science.

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